

LAB - 6

- Q) Create a package CIE which has 2 classes - Student and Internals. The class Student has members like USN, name, sem. The class Internals derived from Student has an array that stores the internal marks scored in five courses of the current semester of the student. Create another package SEE which has the class External which is a derived class of student. This class has an array that stores the SEE marks scored in five courses of the current semester of the student. Import the two packages in a file that declares the final marks of n students in all five courses.

// Student.java

```
package CIE;

public class Student {
    protected String name;
    protected int [] marks;
    public Student (String name) {
        this.name = name;
        this.marks = new int [5];
    }

    public String getName () {
        return name;
    }

    public void setMarks (int [] marks) {
        this.marks = marks;
    }
}
```

```
public int [] getMarks () {  
    return marks ;  
}
```

// Internal. java

```
package CIE ;  
public class Internal extends Student {  
    int [] internal Marks ;  
    public Internal (String name , int [] internal mark) {  
        super (name) ;  
        this . internalMarks = internal marks ;  
        this . set marks ( internal Marks) ;  
    }  
}
```

// External. java

```
package SEE ;  
import CIE. Student ;  
public class External extends Student {  
    int [] external marks ;  
    public External (String name , int [] external marks) {  
        super (name) ;  
        this . external marks = external Marks ;  
        this . set Marks ( external Marks) ;  
    }  
}
```

```
import CIE. internal ;  
import SEE. external ;  
import java . util . Scanner ;
```



```

public class main {
    public static void main (String [] args) {
        System.out.print
        Scanner sc = new Scanner (System.in);
        System.out.println ("Enter no. of students");
        int n = sc.nextInt();
        sc.nextLine();
        Internal [] internal Students = new Internal [n];
        External [] external Students = new External [n];
        for (int i = 0 ; i < n ; i++) {
            System.out.print ("Enter name " + (i+1) + " :");
            String name = sc.nextLine();
            System.out.print ("Enter marks");
            int [] internal Marks = new int [5];
            for (int j = 0 ; j < 5 ; j++) {
                internal Marks [j] = sc.nextLine();
            }
            sc.nextLine();
            System.out.print ("Enter external marks")
            int [] external Marks = new int [5];
            for (int j = 0 ; j < 5 ; j++) {
                System.out.print ("Enter marks");
                external marks [j] = sc.nextInt();
            }
            sc.nextLine();
            internal Students[i] = new Internal (name, internal Marks);
            external Students[i] = new External (name, external Marks);
        }
    }
}

```

```
System.out.print("Final marks");  
for (int i = 0; i < n; i++) {  
    int [] internal Marks = internal Student [i]. get marks ();  
    int [] external Mark = external Student [i]. get mark ();  
    System.out.print("Internal marks")  
    for (int mark : internal Marks) {  
        System.out.println(mark + " ");  
    }  
    System.out.println("External marks");  
    for (int mark : external marks) {  
        System.out.println("E mark + " );  
    }  
    System.out.println("Final marks");  
    for (int j = 0; j < 5; j++) {  
        int final Mark = internal mark [j] + external marks [j]  
        System.out.print ( final mark + " ");  
    }  
    sc.close (); }  
}
```


Output :

Enter number of students : 1

Enter name of student 1 : A

Enter internal marks (5 courses) for A :

40

48

46

25

44

Enter external marks (5 courses) for A :

42

45

47

46

48

Final marks of all students :

Student : A

Internal marks : 40 48 46 25 44

~~External marks~~ : 42 45 47 46 48

~~Final marks~~ : 82 93 93 71 92